Guenter Weiss

Biographical sketch

I studied medicine at the University of Innsbruck and performed a thesis at the Institute for Medical Chemistry and Biochemistry. I then joined as a post –doctoral fellow the group of Helmut Wachter at the Department of Medical Chemistry and Biochemistry. I moved then to the Department of Internal Medicine at the University of Innsbruck for my medical training in internal medicine which I interrupted for another post-doctoral fellowship at the EMBL in the group of Matthias Hentze to work on cytoplasmic gene regulation in iron homeostasis. I build up my own research group thereafter based on the continuous support of the FWF and other funding organizations, successfully completed two habilitations (Medical Biochemistry, Internal Medicine) and tried to combine my clinical work and duties with my enthusiasm in the laboratory. Currently, I am professor of medicine at the Medical Unvierstiy of Innsbruck (§98) and director of the Division of Internal Medicine VI (infectious diseases, immunology, rheumatology, pneumology), In 2015 I was elected into the Austrian Academy of Science as a corresponding member.

My research focuses on the one hand on multiple aspects of cellular and systemic iron homeostasis and their dysregulation in specific pathological conditions including anemia of chronic disease and iron overload, and on the regulatory network between iron homeostasis, immune function and infection with a specific emphasis to intracellular bacteria residing in the phagolysosome. Further I am interested in the evaluation of the role of innate resistance genes of macrophages and their functional impact on host control of infection and orchestration of innate and adaptive immune responses, and we study how metabolic alterations (metals, lipids, hormones, peptides) of the host or microbial environment affects the course of infections or auto-diseases immune diseases.

Curriculum vitae

Medical University of Innsbruck
Department of Internal Medicine II
Infectious Diseases, Immunology, Rheumatology, Pneumology
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Email: Guenter.Weiss@i-med.ac.at
ORCID: 0000-0003-0709-2158

Date of birth	March 10th, 1965
Place of birth	Innsbruck, Austria
Citizenship	Austrian

Education

1984-1990	Study of human medicine at the Leopold Franzens University, Innsbruck; doctorate after passing all examinations ”summa cum laude”
1986-1990	Thesis- Institute for Medical Chemistry and Biochemistry, University of Innsbruck on: ”Role of histone acetylation and histone H1o exchange for the initiation of replication in regeneration rat liver and in the rat hepatoma AS30D

Career History

1990-1992	Research assistant (Post-Doc) at the Inst. of Med. Chem.& Biochem.,University of Innsbruck
1992-93 & 1995	Research fellowships at the European Molecular Biology Laboratory (EMBL), Gene expression programme (head: MW Hentze), Heidelberg, Germany
since 1993	Staff member at the Dept. of Internal Med., University of Innsbruck
1996	Tenure, (Habilitation-venia docendi) for ”Medical Biochemistry”
1997	ao. Univ.-Prof. (Associate Professor) at the Dept. of Internal Medicine
1998	Board certification for „Internal Medicine“

1998	Tenure, (Habilitation-venia docendi) for „Internal Medicine“
1999	visiting professor, George Washington University, Washington, D.C.
1999-2012	Head of the unit for Infectious Diseases and Clinical Immunology, Department of Internal Medicine, MUI; Head of the research laboratory for “Molecular Immunology and Infectious Diseases”
2001	Board certification “Intensive care medicine”
2003-2008	Vice- chairmen at the Department of General Internal Medicine, MUI
2008-2012	Vice -Director at the Department of Internal Medicine I
2007	Board certification “Infectious diseases and Tropical Medicine”
2008	Appointment as full Professor (W3-position) for “Clinical Immunology and Infectious Diseases” at the University of Ulm, Germany-- declined
2009	Appointment as §99 Professor for “Clinical Immunology and Infectious Diseases”, Department of Internal Medicine, Innsbruck
2012	Appointment as Full Professor (§98) of Internal Medicine and Director of Division of Internal Medicine II (Infectious Diseases, Immunology, Rheumatology, Pneumology), Med. University, Innsbruck, Austria

Fellowships, Awards

Höchst-Award/1992; Prof. Brandl-Award/1993; Anton von Eiselsberg Award/1994; Bristol-Meyers-Squibb-Award 1994; Science award of the City of Innsbruck/1996; Paracelsus-Award/1997; Novartis-Award for Medicine/ 1998; Kraupp Award for the best habilitation in medicine in Austria in 1999; Prof. Spitzy Award for Infectious Disease / 2000

Senior author awards: Wewalka Award for Gastroenenterology/ 2000, Paracelsus Award/ 2003, Science award of the City of Innsbruck/2006; Aventis-Award/ 2007; Paracelsus Award/2008, Wewalka Award for Gastroenterology/2008; Ferring Award for Gastroenterology/2009; Liechtensteinaward,/2009, Brandl Award 2010, Tuba-Award for Geriatric Research 2010; Wewalka Award for Gastroenterology/ 2010; Paracelsus Award/ 2011; Kraupp Award/ 2011; Sanofi-Aventis Award/2011; Theodor Körner Award/ 2012; Paracelsus Award /2014; Austrian Infection Award /2015; Paracelsus Award /2015; Science Award of the City of Innsbruck 2015; Austrian Infection Award 2017;

Publications

322 original publications (including short reports) and reviews in peer reviewed journals,3 books, 38 book chapters, >200 invited lectures,
Hirsch (h)-index: 64, Cumulative Impact Factor: >1800,
Cumulative Citations: > 16000

Patents

None

Other Functions

Corresponding member of the Austrian Academy of Science (since 2015)
Chair of Comprehensive Center for Infection, Immunology and Transplantation at the Medical University of Innsbruck, 2009- onwards.
President “ European Macrophage and Dendritic Cell Society” 2014-2017
Director “International Bioiron Society” 2007-2011
President of the Austrian Society for Infectious Diseases and Tropical Medicine 2011-13.
Elected member of the Paul- Ehrlich Society for Chemotherapy, Germany
Editorial Boards: “Clinical Microbiology Infection”, “Haematologica”,
Section Editor: “Infection”

Research Interests

cellular and systemic iron homeostasis and associated pathologies, host-pathogen interactions, innate immunity

Funds obtained (in €, 5 most important ones)

Grant-Nr. 037296 (Euroiron1) Genetic control of the pathogenesis of diseases based on iron accumulation.	257.000	European Union 6th Framework-STREP	2007-2010
Proposal 278408-2: Consortium for antiCalins as next generation high-affinity protein therapeutics	416.000	European Union 7th Framework/ FP7-HEALTH,	2011 – 2015
P 19664-MED: Pharmacological modification of iron transport by divalent metal transporter 1	409.000	FWF	2007-2012
W-1253: HOROS—Host Response in Opportunistic Infections—Doctoral Programme	1.804.698 for seven groups	FWF	2014-2022
Christian Doppler Laboratory for Iron metabolism and Anemia research	920.000	Christian Doppler Society	2017-2024

PhD students since 2013

PhD Student	PhD Thesis	Start	Defense	Paper
Anna Mitterstiller	The role of heme oxygenase 1 in regulating Iron homeostasis and innate immune response to Salmonella infection	2010	2014	3
David Haschka (co-supervision with IT)	Pathways for pathogen control in macrophages via modulation host iron homeostasis in Listeria and Salmonella infection	2012	2017	12
Stephanie Dichtl	Regulation of iron homeostasis by catecholamines	2014	2018	3
Chiara Volani	Mitochondrial respiration and iron homeostasis in anemia	2015	ongoing	3
Verena Petzer, co-supervision with HH	Regulatory function of bone marrow macrophages in erythropoiesis	2016	ongoing	2
Natascha Brigo	Epigenetic regulation of iNOS and arginase in Salmonella infection	2017	ongoing	
Alexander Hofmann	Systemic evaluation of iron metabolic response upon infection with intra- and extracellular bacteria	2018	ongoing	
Lara Valente De Souza	Comparative analysis of iron supplementation strategies on erythropoiesis and off target pathways in anemia of chronic disease	2017	onoging	

International collaborators

	Project	Joint public.	lab for stay abroad
Ferric Fang, Univ. Of Washington, Seattle, WA,USA	Salmonella iron homeostasis mutants	9	yes
Giuseppe Paglia, EURAC, Bolzano, Italy	Analysis of metabolic profile	2	yes
Christian Bogdan, University of Erlangen, Germany	Host- pathogen models of Leishmania, Macroph. specific immune gene deletion studies	4	yes

International Network: COST-Myeloid cells (Myeuniter) & ERA-INFECT

Günter Weiss; 10 most important scientific publications:

1. Theurl I, Hilgendorf I, Nairz M, Tymoszuk P, Haschka D, Asshoff M, He S, Gerhardt LMS, Holderried TAW, Seifert M, Sopper S, Fenn AM, Anzai A, Rattik S, McAlpine C, Theurl M, Wieghofer P, Iwamoto Y, Weber GF, Harder NK, Chousterman BG, Arvedson TL, McKee M, Wang F, Lutz OMD, Rezoagli E, Babitt JL, Berra L, Prinz M, Nahrendorf M, **Weiss G**, Weissleder R, Lin HY, Swirski FK. On-demand erythrocyte disposal and iron recycling requires transient macrophages in the liver. **Nature Medicine** 22:945-51, 2016.

2. Nairz M, Ferring-Appel D, Casarrubea D, Sonnweber T, Viatte L, Schroll A, Haschka D, Fang FC, Hentze MW*, **Weiss G***, Galy B. Iron Regulatory Proteins Mediate Host Resistance to Salmonella Infection. **Cell Host Microbe.** 18:254-61, 2015.* corresponding authors

3. Demetz E, Schroll A, Auer K, Heim C, Patsch JR, Eller P, Theurl M, Theurl I, Theurl M, Seifert M, Lener D, Stanzl U, Haschka D, Asshoff M, Dichtl S, Nairz M, Huber E, Stadlinger M, Moschen AR, et. al. Trauner M, Norata GD, Claudel T, Hicks AA, **Weiss G***, Tancevski I*.* corresponding and senior authors .The arachidonic acid metabolome serves as a conserved regulator of cholesterol metabolism. **Cell Metab**. 20:787-98, 2014

4. Nairz M, Schleicher U, Schroll A, Sonnweber T, Theurl I, Ludwiczek S, Talasz H, Brandacher G Moser PL, Muckenthaler MU, Fang FC, Bogdan C, **Weiss G**. Nitric oxide-mediated regulation of ferroportin-1 controls macrophage iron homeostasis and immune function in *Salmonella* infection, **J Exp Med** 2013, 210; 855-873. doi: 10.1084. PMID: 23630227

5. Nairz M, Schroll A, Moschen AR, Sonnweber T, Theurl M, Theurl I, Taub N, Jamnig C, Neurauter D, Huber LA, Tilg H, Moser PL, **Weiss G**. Erythropoietin contrastingly affects bacterial infection and experimental colitis by inhibiting nuclear factor-kappaB-inducible immune pathways. **Immunity**. 2011. 34(1):61-74.

6. Theurl I, Schroll A, Sonnweber T, Nairz M, Theurl M, Willenbacher W, Eller K, Wolf D, Seifert M, Sun CC, Babitt JL, Hong CC, Menhall T, Gearing P, Lin HY, **Weiss G**. Pharmacologic inhibition of hepcidin expression reverses anemia of chronic inflammation in rats. **Blood**. 2011. 118(18):4977-84.

7. Ludwiczek S, Theurl I, Muckenthaler MU, Jakab M, Mair SM, Theurl M, Kiss J, Paulmichl M, Hentze MW, Ritter M, **Weiss G**. Ca2+ channel blockers reverse iron overload by a new mechanism via divalent metal transporter-1. **Nature Medicine** 2007. 13(4):448-54.

8. **Weiss G**, Goodnough LT. Anemia of chronic disease. **N Engl J Med**. 2005. 352(10):1011-23. PMID: 15758012

9. Zoller H, Pietrangelo A, Vogel W, **Weiss G**. Duodenal metal-transporter (DMT-1, NRAMP-2) expression in patients with hereditary haemochromatosis. **Lancet**. 1999. 353(9170):2120-3. PMID: 10382697.

10. **Weiss G**, Werner-Felmayer G, Werner ER, Grunewald K, Wachter H, Hentze MW. Iron regulates nitric oxide synthase activity by controlling nuclear transcription. **J Exp Med**. 1994. 180(3):969-76. PMID: 7520477.

Günter Weiss; all publications since 2013

Original papers

1. Pizzini A, Filipiak W, Wille J, Ager C, Wiesenhofer H, Kubinec R, Blasko J, Tschurtschenthaler C, Mayhew CA, **Weiss G**, Bellmann-Weiler R. Analysis of volatile organic compounds in the breath of patients with stable or acute exacerbation of chronic obstructive pulmonary disease. **J Breath Res.** 2018 Jan 3. doi: 10.1088/1752-7163/aaa4c5. PMID: 29295966

2. Dichtl S, Haschka D, Nairz M, Seifert M, Volani C, Lutz O, **Weiss G**. Dopamine promotes cellular iron accumulation and oxidative stress responses in macrophages. **Biochem Pharmacol.** 148:193-201, 2018 PMID: 29208364

3. Nairz M, Schroll A, Haschka D, Dichtl S, Tymoszuk P, Demetz E, Moser P, Haas H, Fang FC, Theurl I, **Weiss G**. Genetic and Dietary Iron Overload Differentially Affect the Course of *Salmonella* Typhimurium Infection- **Front Cell Infect Microbiol**. 2017 Apr 11;7:110. doi: 10.3389/fcimb.2017.

4. Volani C, Doerrier C, Demetz E, Haschka D, Paglia G, Lavdas AA, Gnaiger E, **Weiss G**. Dietary iron loading negatively affects liver mitochondrial function. **Metallomics.** 2017 Nov 15;9(11):1634-1644. PMID: 29026901

5. Nairz M, Haschka D, Dichtl S, Sonnweber T, Schroll A, Aßhoff M, Mindur JE, Moser PL, Wolf D, Swirski FK, Theurl I, Cerami A, Brines M, **Weiss G**. Cibinetide dampens innate immune cell functions thus ameliorating the course of experimental colitis. **Sci Rep.** 2017 Oct 12;7(1):13012. doi: 10.1038/s41598-017-13046-3. PMID: 29026145

6. Lass-Flörl C, Aigner M, Nachbaur D, Eschertzhuber S, Bucher B, Geltner C, Bellmann R, Lackner M, Orth-Höller D, Würzner R, **Weiss G**, Glodny B. Diagnosing filamentous fungal infections in immunocompromised patients applying computed tomography-guided percutaneous lung biopsies: a 12-year experience. **Infection.**45:867-875, 2017. PMID: 28956284

7. Wu A, Tymoszuk P, Haschka D, Heeke S, Dichtl S, Petzer V, Seifert M, Hilbe R, Sopper S, Talasz H, Bumann D, Lass-Flörl C, Theurl I, Zhang K, **Weiss G**. Salmonella utilizes zinc to subvert anti-microbial host defense of macrophages via modulation of NF-κB signaling. **Infect Immun.** 2017 Sep 5. pii: IAI.00418-17. doi: 10.1128/IAI.00418-17. PMID: 2887444.

8. Dobner J, Ress C, Rufinatscha K, Salzmann K, Salvenmoser W, Folie S, Wieser V, Moser P, **Weiss G**, Goebel G, Tilg H, Kaser S. Fat-enriched rather than high- fructose diets promote whitening of adipose tissue in a sex-dependent manner. **J Nutr Biochem.** 49:22-29, 2017. PMID: 28863366.

9. Volani C, Caprioli G, Calderisi G, Sigurdsson BB, Rainer J, Gentilini I, Hicks AA, Pramstaller PP, **Weiss G**, Smarason SV, Paglia G. Pre-analytic evaluation of volumetric absorptive microsampling and integration in a mass spectrometry-based metabolomics workflow. **Anal Bioanal Chem.** 2017 Oct;409(26):6263-6276. PMID: 28815270

10. Pizzini A, Lunger F, Sahanic A, Nemati N, Fuchs D, **Weiss G**, Kurz K, Bellmann-Weiler R. Diagnostic and Prognostic Value of Inflammatory Parameters Including Neopterin in the Setting of Pneumonia, COPD, and Acute Exacerbations. **COPD**. 2017 Jun;14(3):298-303.. PMID: 285486.

11. Mosheimer BA, Oppl B, Zandieh S, Fillitz M, Keil F, Klaushofer K, **Weiss G**, Zwerina J. Bone Involvement in Rosai-Dorfman Disease (RDD): a Case Report and Systematic Literature Review. **Curr Rheumatol Rep.** 2017 May;19(5):29. PMID:2840138

12. Resch T, Ashraf MI, Ritschl PV, Ebner S, Fabritius C, Brunner A, Schäfer G, Regele H, Günther J, **Weiss G**, Kotsch K. Disturbances in iron homeostasis result in accelerated rejection after experimental heart transplantation. **J Heart Lung Transplant.** 2017 Jul;36(7):732-743. doi: 10.1016/j.healun.2017.03.004. Epub 2017 Mar 7. PMID: 28372951

13. Asshoff M, Petzer V, Warr MR, Haschka D, Tymoszuk P, Demetz E, Seifert M, Posch W, Nairz M, Maciejewski P, Fowles P, Burns CJ, Smith G, Wagner KU, **Weiss G**, Whitney JA, Theurl I. Momelotinib inhibits ACVR1/ALK2, decreases hepcidin production, and ameliorates anemia of chronic disease in rodents. **Blood**. 2017 Mar 30;129(13):1823-1830. doi: 10.1182/blood-2016-09-740092. Epub 2017 Feb 10.PMID: 28188131

14. Ress C, Moschen AR, Thoeni V, Ebenbichler CF, Weiss H, Molnar C, **Weiss G** Tilg H, Kaser S. Effect of weightun heme oxygenase – 1 tissue expression. **Diabetes Metab.** 2017 Jan 24. pii: S1262-3636(16)30561-4. PMID: 28129997

15. Fava LL, Schuler F, Sladky V, Haschka MD, Soratroi C, Eiterer L, Demetz E, **Weiss G**, Geley S, Nigg EA, Villunger A. The PIDDosome activates p53 in response to supernumerary centrosomes. **Genes Dev.** 2017 Jan 1;31(1):34-45. doi: 10.1101/gad.289728.116. PMID: 28130345

16. Pfeifhofer-Obermair C, Albrecht-Schgoer K, Peer S, Nairz M, Siegmund K, Klepsch V, Haschka D, Thuille N, Hermann-Kleiter N, Gruber T, **Weiss G**, Baier G. Role of PkCtheta in macrophage-mediated immune response to Salmonella typhimurium infection in mice. **Cell Commun Signal.** 2016, 28;14(1):14. PMID: 27465248

17. Moschen AR, Gerner RR, Wang J, Klepsch V, Adolph TE, Reider SJ, Hackl H, Pfister A, Schilling J, Moser PL, Kempster SL, Swidsinski A, Orth Höller D, **Weiss G**, Baines JF, Kaser A, Tilg H. Lipocalin 2 Protects from Inflammation and Tumorigenesis Associated with Gut Microbiota Alterations. **Cell Host Microbe** 19:455-69, 201

18. Möst J, **Weiss G**. Consecutive Infections With Influenza A and B Virus in Children During the 2014-2015 Seasonal Influenza Epidemic. **J Infect Dis.** 2016 Apr 19. pii: jiw104. PMID: 27095422

19. Riedl M, Hofer J, Giner T, Rosales A, Häffner K, Simonetti GD, Walden U, Maier T, Heininger D, Jeller V, **Weiss G**, van den Heuvel L, Zimmerhackl LB, Würzner R, Jungraithmayr TC. Novel biomarker and easy to perform ELISA for monitoring complement inhibition in patients with atypical hemolytic uremic syndrome treated with eculizumab. **J Immunol Methods.** 435:60-7. 2016

20. Theurl I, Hilgendorf I, Nairz M, Tymoszuk P, Haschka D, Asshoff M, He S, Gerhardt LMS, Holderried TAW, Seifert M, Sopper S, Fenn AM, Anzai A, Rattik S, McAlpine C, Theurl M, Wieghofer P, Iwamoto Y, Weber GF, Harder NK, Chousterman BG, Arvedson TL, McKee M, Wang F, Lutz OMD, Rezoagli E, Babitt JL, Berra L, Prinz M, Nahrendorf M, **Weiss G**, Weissleder R, Lin HY, Swirski FK. On-demand erythrocyte disposal and iron recycling requires transient macrophages in the liver. **Nature Medicine** 22:945-51, 2016.

21. Leierer J, Rudnicki M, Braniff SJ, Perco P, Koppelstaetter C, Mühlberger I, Eder S, Kerschbaum J, Schwarzer C, Schroll A, **Weiss G**, Schneeberger S,Wagner S, Königsrainer A, Böhmig GA, Mayer G. Metallothioneins and renal ageing. **Nephrol Dial Transplant.** 31:1444-52, 2016

22. Pechlaner R, Kiechl S, Mayr M, Santer P, Weger S, Haschka D, Bansal SS, Willeit J, **Weiss G**. Correlates of serum hepcidin levels and its association with cardiovascular disease in an elderly general population. **Clin Chem Lab Med.** 54: 151-161. 2016

23. Wieser V, Tymoszuk P, Adolph TE, Grander C, Grabherr F, Enrich B, Pfister A, Lichtmanegger L, Gerner R, Drach M, Moser P, Zoller H, **Weiss G**, Moschen AR, Theurl I, Tilg H. Lipocalin 2 drives neutrophilic inflammation in alcoholic liver disease. **J Hepatol.** 64:872-80, 2016.

24. Macdougall IC, Bircher AJ, Eckardt KU, Obrador GT, Pollock CA, Stenvinkel P, Swinkels DW, Wanner C, **Weiss G**, Chertow GM. Iron management in chronic kidney disease: conclusions from "KidneyDisease: Improving Global Outcomes" (KDIGO) Controversies Conference. **Kidney Int.** 89:28-39, 2016.

25. Mitterstiller AM, Haschka D, Dichtl S, Nairz M, Demetz E, Talasz H, Soares M, Einwallner E, Esterbauer H, Fang FC, Geley S, **Weiss G**. Heme oxygenase 1 controls early innate immune response of macrophages to Salmonella typhimurium infection. **Cell Microbiol.** 2016 Feb 11.

26. Pechlaner R, **Weiss G**, Bansal S, Mayr M, Santer P, Pallhuber B, Notdurfter M, Bonora E, Willeit J, Kiechl S. Inadequate hepcidin serum concentrations predict incident type 2 diabetes mellitus. **Diabetes Metab Res Rev.** 32:187-92, 2016

27. Schaefer B, Haschka D, Finkenstedt A, Petersen BS, Theurl I, Henninger B,Janecke AR, Wang CY, Lin HY, Veits L, Vogel W, **Weiss G**, Franke A, Zoller H. Impaired hepcidin expression in alpha-1-antitrypsin deficiency associated with iron overload and progressive liver disease. **Hum Mol Genet.** 24:6254-63, 2015

28. Nairz M, Schroll A, Haschka D, Dichtl S, Sonnweber T, Theurl I, Theurl M, Lindner E, Demetz E, Aßhoff M, Bellmann-Weiler R, Müller R, Gerner RR, Moschen AR, Baumgartner N, Moser PL, Talasz H, Tilg H, Fang FC, **Weiss G**. Lipocalin-2 ensures host defense against Salmonella Typhimurium by controlling macrophage iron homeostasis and immune response. **Eur J Immunol.** 45:3073-86, 2015

29. Casimiro de Almeida J, Lou-Meda R, Olbert M, Seifert M, **Weiss G**, Wiegerinck ET, Swinkels DW, Solomons NW, Schümann K. The Growth Attainment, Hematological, Iron Status and Inflammatory Profile of Guatemalan Juvenile End-Stage Renal Disease Patients. **PLoS One.** 7; 10:e0140062. 2015.

30. Kurz K, Herold M, Russe E, Klotz W, **Weiss G**, Fuchs D. Effects of Antitumor Necrosis Factor Therapy on Osteoprotegerin, Neopterin, and sRANKL Concentrations in Patients with Rheumatoid Arthritis. **Dis Markers**. 2015; 276969. doi: 10.1155/2015/276969. Epub 2015 Oct 21.

31. Siegert I, Schödel J, Nairz M, Schatz V, Dettmer K, Dick C, Kalucka J, Franke K, Ehrenschwender M, Schley G, Beneke A, Sutter J, Moll M, Hellerbrand C, Wielockx B, Katschinski DM, Lang R, Galy B, Hentze MW, Koivunen P, Oefner, PJ, Bogdan C, **Weiss G**, Willam C, Jantsch J. Ferritin-Mediated Iron Sequestration Stabilizes Hypoxia-Inducible Factor-1 upon LPS Activation in the Presence of Ample Oxygen. **Cell Rep.** 13:2048-55, 2015

32. Nairz M, Ferring-Appel D, Casarrubea D, Sonnweber T, Viatte L, Schroll A, Haschka D, Fang FC, Hentze MW*, **Weiss G***, Galy B. Iron Regulatory Proteins Mediate Host Resistance to Salmonella Infection. **Cell Host Microbe.** 18:254-61, 2015.* corresponding authors

33. Haschka D, Nairz M, Demetz E, Wienerroither S, Decker T, **Weiss G**. Contrasting regulation of macrophage iron homeostasis in response to infection with Listeria monocytogenes depending on localization of bacteria. **Metallomics.** 7:1036-45, 2015

34. Altamura S, Bärtsch P, Dehnert C, Maggiorini M, **Weiss G**, Theurl I, Muckenthaler MU, Mairbäurl H. Increased hepcidin levels in high-altitude pulmonary edema. **J Appl Physiol** 118: 292-8; 2015.

35. Wilflingseder D, Schroll A, Hackl H, Gallasch R, Frampton D, Lass-Flörl C, Pancino G, Saez-Cirion A, Lambotte O, Weiss L, Kellam P, Trajanoski Z, Geijtenbeek T, **Weiss G**, Posch

W.Immediate T-Helper 17 Polarization Upon Triggering CD 11b/c on HIV-Exposed Dendritic Cells.**J Infect Dis.** 212:44-56. 2015

36. Pechlaner R, Willeit P, Summerer M, Santer P, Egger G, Kronenberg F, Demetz E, **Weiss G**, Tsimikas S, Witztum JL, Willeit K, Iglseder B, Paulweber B, Kedenko L, Haun M, Meisinger C, Gieger C, Müller-Nurasyid M, Peters A, Willeit J, Kiechl S. Heme oxygenase-1 gene promoter microsatellite polymorphism is associated with progessive atherosclerosis and incident cardiovascular disease. **Arterioscler Thromb Vasc Biol**. 35:229-36; 2015.

37. Porter JB, Walter PB, Neumayr LD, Evan P, Bansal S, Garbowski M, Weyhmiller MG, Harmatz PR, Wood JC, Miller JL, Byrnes C, **Weiss G**, Seifert M, Grosse R, Grabowski D, Schmidt A, Fischer R, Nielsen P, Niemeyer C, Vichinsky E. Mechanism of plasma non-transferrin bound iron generation: insights from comparing transfused diamond blackfan anaemia with sickle cell and thalassaemia patients. **Br J Haematol.** 167:692-6; 2014.

38. Zitt E, Sturm G, Kronenberg F, Neyer U, Knoll F, Lhotta K, **Weiss G**. Iron supplementation and mortality in incident dialysis patients: an observational study. **PLoS One.** 9:e114144, 2014.

39. Demetz E, Schroll A, Auer K, Heim C, Patsch JR, Eller P, Theurl M, Theurl I, Theurl M, Seifert M, Lener D, Stanzl U, Haschka D, Asshoff M, Dichtl S, Nairz M, Huber E, Stadlinger M, Moschen AR, Li X, Pallweber P, Scharnagl H, Stojakovic T, März W, Kleber ME, Garlaschelli K, Uboldi P, Catapano AL, Stellaard F, Rudling M, Kuba K, Imai Y, Arita M, Schuetz JD, Pramstaller PP, Tietge UJ, Trauner M, Norata GD, Claudel T, Hicks AA, **Weiss G***, Tancevski I*.The arachidonic acid metabolome serves as a conserved regulator of cholesterol metabolism. **Cell Metabolism** 20:787-98, 2014. * corresponding and senior authors

40. Theurl M, Nairz M, Schroll A, Sonnweber T, Asshoff M, Haschka D, Seifert M, Willenbacher W, Wilflingseder D, Posch W, Murphy AT, Witcher DR, Theurl I, **Weiss G**. Hepcidin as a predictive factor and therapeutic target in erythropoiesis-stimulating agent treatment for anemia of chronic disease in rats. **Haematologica.** 99:1516-24, 2014.

41. Pechlaner R, Kiechl S, Willeit P, Demetz E, Haun M, Weger S, Oberhollenzer F, Kronenberg F, Bonora E, **Weiss G**, Willeit J. Haptoglobin 2-2 Genotype is Not Associated With Cardiovascluar Risk in Subjects With Elevated Glycohemoglobin - Results From the Bruneck Study. **J Am Heart Assoc.**16; pii:e000732; 2014.

42. Tancevski I, Nairz M, Duwensee K, Auer K, Schroll A, Heim C, Feistritzer C, Hoefer J, Gerner RR, Moschen AR, Heller I, Pallweber P, Li X, Theurl M, Demetz E, Wolf AM, Wolf D, Eller P, Ritsch A, **Weiss G**. Fibrates ameliorate the course of bacterial sepsis by promoting neutrophil rectruitment via CXCR2.**EMBO Mol Med.** 6:810-20; 2014.

43. Martinez-Pinna R, Lindholt JS, Madrigal-Matute J, Blanco-Colio LM, Esteban-Salan M, Torres-Fonseca MM, Lefebvre T, Delbosc S, Laustsen J, Driss F, Vega de Ceniga M, Gouya L, **Weiss G**, Egido J, Mailhac O, Michel JB, Martin-Ventura JL. From tissue iron retention to low systemic haemoglobin levels, new pathophysiological biomarkers of human abdominal aortic aneurysm. **Thromb Haemost.** 112:87-95; 2014.

44. Sonnweber T, Nachbaur D, Schroll A, Nairz M, Seifert M, Demetz E, Haschka D, Mitterstiller AM, Kleinsasser A, Burtscher M, Trübsbach S, Murphy AT,Wroblewski V, Witcher DR, Mleczko-Sanecka K, Vecchi C, Muckenthaler MU,Pietrangelo A, Theurl I, **Weiss G**. Hypoxia induced downregulation of Hepcidin is mediated by platelet derived growth factor BB. **Gut.** 63:1951-9; 2014.

45. Reinisch W, Chowers Y, Danese S, Dignass A, Gomollón F, Haagen Nielsen O, Lakatos PL, Lees CW, Lindgren S, Lukas M, Mantzaris GJ, Michetti P, Moum B, Peyrin-Biroulet L, Toruner

M, van der Woude J, **Weiss G**, Stoevelaar H. The management of iron deficiency in inflammatory bowel disease – an online tool developed by the RAND/UCLA appropriateness method.**Aliment Pharmacol Ther.** 38:1109-18, 2013

46. Wenisch C, **Weiss G**, Lechner A, Meilinger M, Rittler K, Muzatko N, Pomgyi B, Kutilek M, Bellmann-Weiler R, Fürst UM, Andorfer A, Wenisch JM. Epidemiology of patients hospitalised for pneumonia in 2011: a prospective multicentre cohort study. **Wien Klin Wochenschr.**125:621-8, 2013.

47. Schümann K, Solomons NW, Orozco M, Romero-Abal ME, **Weiss G**. Differences in circulating non-transferrin-bound iron after oral administration of ferrous sulfate, sodium iron EDTA, or iron polymaltose in women with marginal iron stores. **Food Nutr Bull.** 2013;34:185-93; 2013.

48. Warszawska JM, Gawish R, Sharif O, Sigel S, Doninger B, Lakovits K, Mesteri I, Nairz M, Boon L, Spiel A, Fuhrmann V, Strobl B, Müller M, Schenk P, **Weiss G**, Knapp S. Lipocalin 2 deactivates macrophages and worsens pneumococcal pneumonia outcomes. **J Clin Invest**. 123:3363-72, 2013.

49. Goetze O, Schmitt J, Spliethoff K, Theurl I, **Weiss G**, Swinkels DW, Tjalsma H, Maggiorini M, Krayenbühl P, Rau M, Wojtal K, Müllhaupt B, Fried M, Gassmann M, Lutz T, Geier A. Adaptation of iron transport and metabolism to acute high altitude hypoxia in mountaineers. **Hepatology**. 58; 2153-62; 2013.

50. Nairz M, Schleicher U, Schroll A, Sonnweber T, Theurl I, Ludwiczek S, Talasz H, Brandacher G Moser PL, Muckenthaler MU, Fang FC, Bogdan C, **Weiss G**. Nitric oxide-mediated regulation of ferroportin-1 controls macrophage iron homeostasis and immune function in *Salmonella* infection, **J Exp Med** 210; 855-873, 2013

51. Eller K, Schroll A, Banas M, Kirsch AH, Huber JM, Nairz M, Skvortsov S, **Weiss G**, Rosenkranz AR, Theurl I. Lipocalin-2 expressed in innate immune cells is an endogenous inhibitor of inflammation in murine nephrotoxic serum nephritis.**PLoS One**. 2013;8:e67693

52. Sun CC, Vaja V, Chen S, Theurl I, Stepanek A, Brown DE, Cappellini MD, **Weiss G**, Hong CC, Lin HY, Babitt JL. A hepcidin lowering agent mobilizes iron for incorporation into red blood cells in an adenine-induced kidney disease model of anemia in rats.**Nephrol Dial Transplant**. 28: 1733-43; 2013.

53. Jankowska EA, Malyszko J, Ardehali H, Koc-Zorawska E, Banasiak W, von Haehling S, Macdougall IC, **Weiss G**, McMurray JJ, Anker SD, Gheorghiade M, Ponikowski P. Iron status in patients with chronic heart failure. **Eur Heart J**. 34:827-34, 2013.

54. Bellmann-Weiler R, Schroll A, Engl S, Nairz M, Talasz H, Seifert M, **Weiss G**. Neutrophil gelatinase-associated lipocalin and interleukin-10 regulate intramacrophage Chlamydia pneumoniae replication by modulating intracellular iron homeostasis. **Immunobiology** 218; 969-78; 2013.

55. Schroecksnadel S, Gostner J, Jenny M, Kurz K, Schennach H, **Weiss G**, Fuchs D. Immunomodulatory effects in vitro of vitamin K antagonist acenocoumarol. **Thromb Res.**; 131:e264-9; 2013

Reviews

1. **Weiss G**, Carver PL. Role of divalent metals in infectious disease susceptibility and outcome. **Clin Microbiol Infect**. 24:16-23, 2018 PMID: 28143784

2. **Weiss G**. Nutrition and Infection: **Clin Microbiol Infect.**24:8-9, 2018 PMID: 29108948

3. Nielsen OH, Soendergaard C, Vikner ME, **Weiss G**. Rational Management of Iron-Deficiency Anaemia in Inflammatory Bowel Disease. **Nutrients.** 2018 Jan 13;10(1). pii: E82. doi: 10.3390/nu10010082. Review. PMID: 29342861

4. Kaindlstorfer C, Jellinger KA, Eschlböck S, Stefanova N, **Weiss G**, Wenning GK. The Relevance of Iron in the Pathogenesis of Multiple System Atrophy: A Viewpoint J Alzheimers Dis. 2018;61(4):1253-1273. doi: 10.3233/JAD-170601.PMID: 29376857

5. Nairz M, Theurl I, Swirski FK, **Weiss G**. "Pumping iron"-how macrophages handle iron at the systemic, microenvironmental, and cellular levels. **Pflugers Arch**. 469:397-418, 2017. PMID: 28251312

6. Pizzini A, Lunger L, Demetz E, Hilbe R, **Weiss G**, Ebenbichler C, Tancevski I. The Role of Omega-3 Fatty Acids in Reverse Cholesterol Transport: A Review. **Nutrients.** 2017;9(10). pii: E1099. doi: 10.3390/nu9101099. Review. PMID: 28984832

7. Nielsen OH, Coskun M, **Weiss G**. Iron replacement therapy: do we need new guidelines? **Curr Opin Gastroenterol.** 32:128-35; 2016

8. Nairz M, Theurl I, Wolf D, **Weiss G**. Iron deficiency or anemia of inflammation? : Differential diagnosis and mechanisms of anemia of inflammation. **Wien Med Wochenschr.** 166:411-423, 2016, PMID: 27557596.

9. Aigner E, **Weiss G**, Datz C. Dysregulation of iron and copper homeostasis in nonalcoholic fatty liver. **World J Hepatol.** 27: 177-88; 2015.

10. Nairz M, Schroll A, Demetz E, Tancevski I, Theurl I, **Weiss G**."Ride on the ferrous wheel" – The cycle of iron in macrophages in health and disease. **Immunobiology**; 220:280-294, 2015.

11. **Weiss G**, Schaible UE. Macrophage defense mechanisms against intracellular bacteria. **Immunol Rev.** 264:182-203, 2015.

12. Nielsen OH, Ainsworth M, Coskun M, **Weiss G**. Management of Iron-Deficiency Anemia in Inflammatory Bowel Disease: A Systematic Review. **Medicine** (Baltimore). 2015 Jun;94(23):e963. PMID: 26061331

13. **Weiss G**. Anemia of Chronic Disorders: New Diagnostic Tools and New Treatment Strategies. **Semin Hematol.** 2015 Oct; 52(4):313-20.

14. Szebeni J, Fishbane S, Hedenus M, Howaldt S, Locatelli F, Patni S, Rampton D, **Weiss G**, Folkersen J. Hypersensitivity to intravenous iron: classification, terminology, mechanisms and management. **Br J Pharmacol**. 2015; 172(21):5025-36.

15. Soares MP, **Weiss G**. The Iron age of host-microbe interactions. **EMBO Rep**. 16:1482-500, 2015.

16. Nairz M, Haschka D, Demetz E, **Weiss G**. Iron at the interface of immunity and infection. **Front Pharmacol**. 5: 152; 2014

17. Rampton D, Folkersen J, Fishbane S, Hedenus M, Howaldt S, Locatelli F, Patni S, Szebeni J, **Weiss G**. Hypersensitivity reactions to intravenous iron: guidance for risk minimization and management. **Haematologica.** 99:1671-6. 2014.

18. **Weiss G**, Schett G. Anaemia in inflammatory rheumatic diseases. **Nat Rev Rheumatol.** 2013, 9:205-215.

19. Koskenkorva-Frank TS, **Weiss G**, Koppenol WH, Burckhardt S. The complex interplay of iron metabolism, reactive oxygen species, and reactive nitrogen species: Insights into the potential of various iron therapies to induce oxidative and nitrosative stress. **Free Radic Biol Med**. 65:1174-1194, 2013.